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Discrete Mathematics Relations
Antisymmetric – Matrix Representation
With
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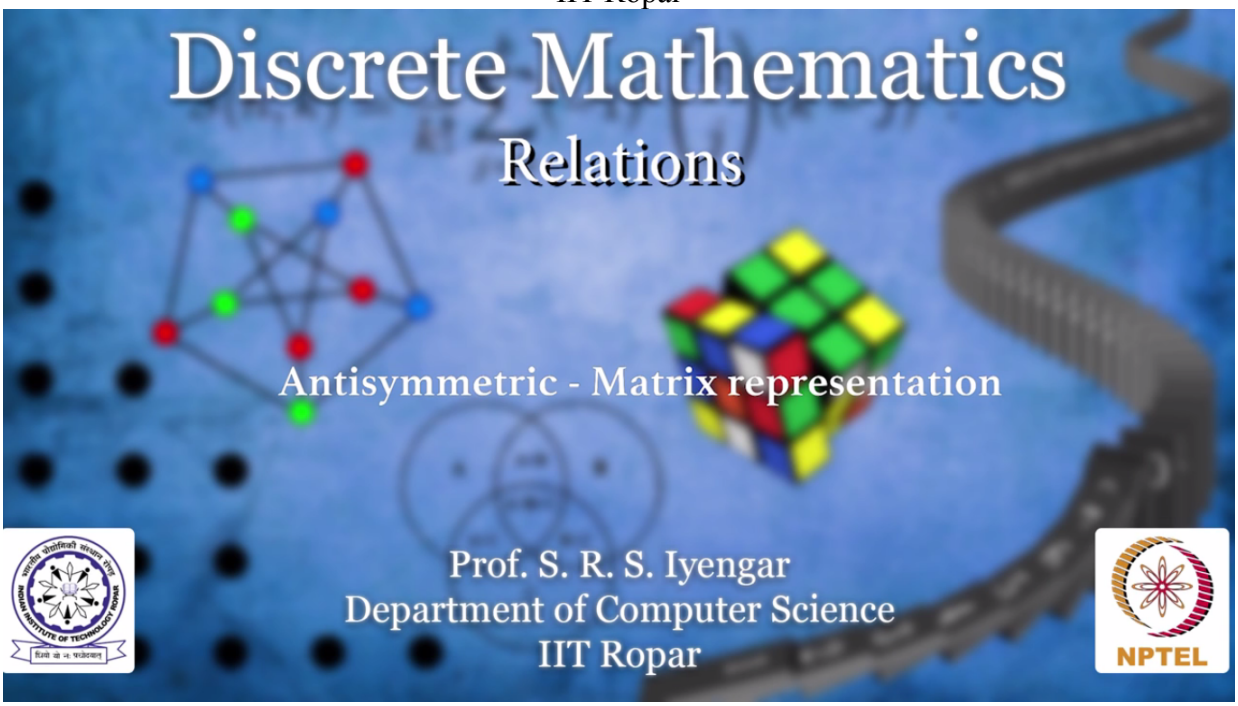
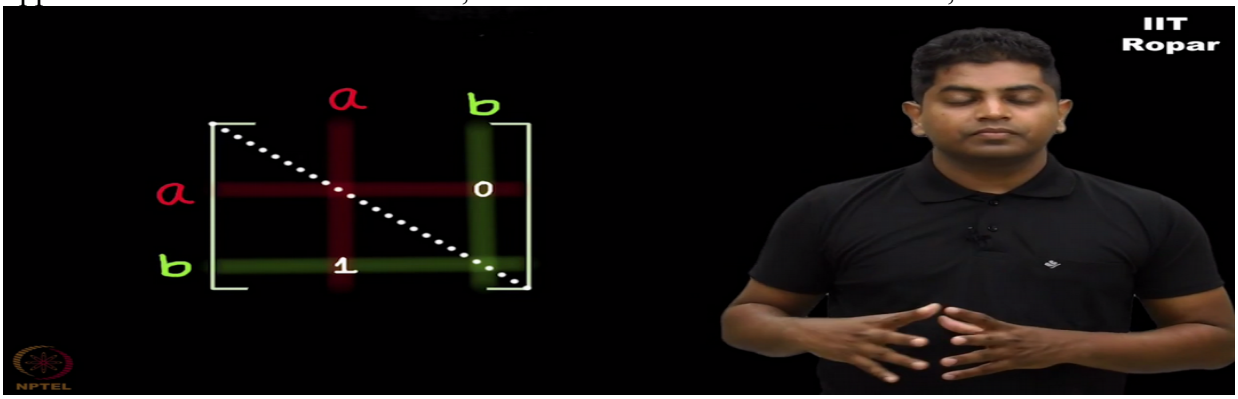


We saw how does the graphical representation of an antisymmetric relation, how does it look like, we saw that. Now let us see how does the matrix representation look like.
Again, it's pretty obvious. (a, b) is present means a through b^{th} column will have a 1. (b, a) shouldn't be present means b through an a^{th} column should be 0. So what I mean is whenever an entry below the diagonal is 1, the corresponding entry above the diagonal symmetrically opposite should be 0. If it's a 1 here, it should be a 0 there. If it's a 1 there, it has to be a 0 here.



All that I am saying is that you cannot spot a 1 and a 1 symmetrically across the diagonal. That is what we mean by an antisymmetric relation.

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